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VACAVALLEY RADIO CLUB

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VACAVILLE , CALIFORNIA **August 2016**

This 'n' That

Well, with the club in recess from June through August I hope that all the club members are having a good time.

The newsletter continues through the recess period as usual so I have to find something to collect or write about. So I guess I'll start this issue with a short recap of the year so far and a look at what will be coming up in the near future.

In March we began meeting at the Nut Tree Airport Conference Room with air conditioning, plenty of comfortable seating and a large video screen that we could use for presentations. Members of the club held several interesting presentations during the first few months.

On June 9, the club had a well-attended social meeting at Murillo's.

After much planning and preparation, the club held a very successful Field Day during the weekend of June 25-26. Plenty of lessons resulted in new ideas for the next Field Day-2017.

Several new members signed up this year.with the club

Coming events

A Club Board meeting will be held at Pietro's #1 at 1830, August 11.

In October the all important nominations for club officers will be made followed up in November with election of new officers.

The club will resume regular meetings on the second Thursday, September 10.

So...with that, if anyone wants to add something important to the calendar please send me an e-mail and I will e-mail it out to the members

73 for now, Jerry Bowen

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Visit the Repeater online courtesy of Bob K6HEW at: w6vvr

Club repeater in Vacaville:w6vvr.net 145.470 MHz(-) pl 127.3
The W6VVR net call is Tuesday evenings at 8pm on the club repeater. All are invited to participate in this weekly meeting on the air. 73!

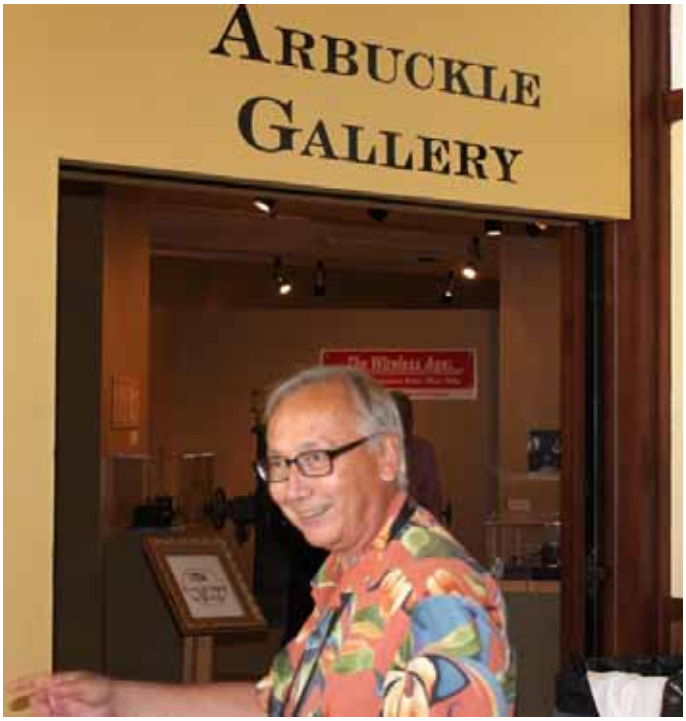
Additional local repeater
WV6F 440.025(+)

A Trip to San Jose

Jerry Bowen

About a week before I wrote this article, Dave Trojan dropped into the Vacaville Heritage Council and asked me if I would be interested in joining him to the San Jose Museum and Archives and a private Cipher History Museum. The Museum had a display of all kinds of historic radio equipment at the Central Hotel in the Arbuckle Gallery.

Naturally I jumped at the chance!



Ralph Simpson greeted us at the entrance of the Central Hotel's Arbuckle Gallery where the current exhibit of amazing electronics was on display

We had an appointment at 1000 to meet with three Community Guest Curators, each of them with a different expertise. The traffic was hurmungous but we managed to arrive right on time. Ralph Simpson, Stuart Hansen, and Bjorn Forsberg greeted us at the archives.

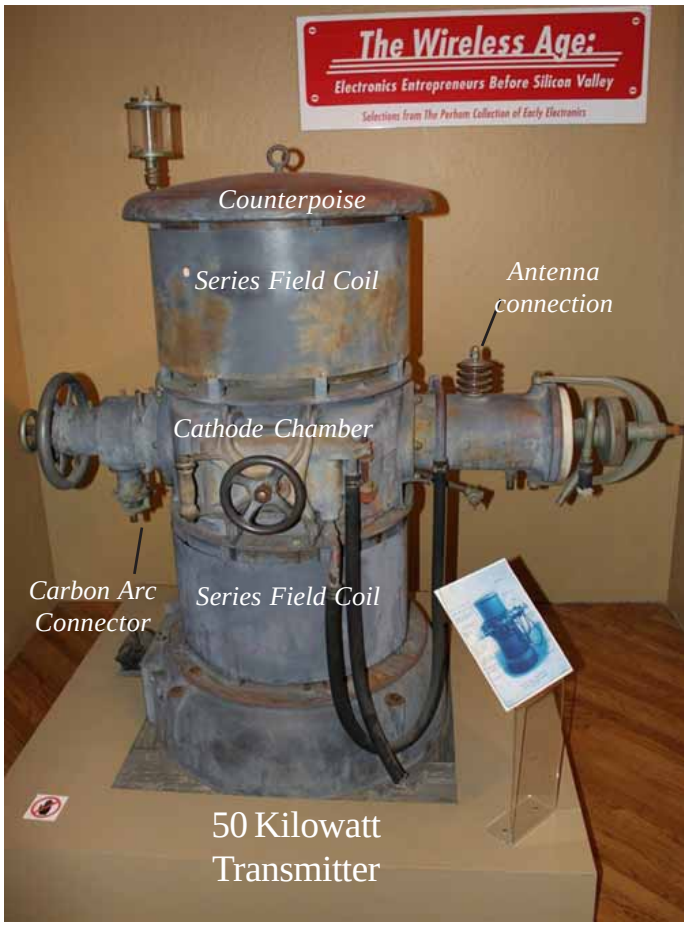
Ralph Simpson, retired, formally worked for Cisco and IBM. He began his collection of early cipher devices in 2000 with a German Enigma machine and has expanded his private museum ever since, including an encryption device that he operated during our early NASA space missions.

Stuart Hansen worked at Varian, Hewlett Packard and Agilent companies. He considers himself a hardware collector especially interested in any early radio, transmission tubes, and transmitters and "things that glow at night."

Bjorn Forsberg formerly of TRW, Ford Aerospace, and Loral Space Systems. He became a Ham at age 18 in Sweden (SM5UR) and is an avid collector of antique radios-primarily those used during WW-I and early tube radios.

Later on we met Cate Mills, the Curator of the Library & Archives, History San Jose. She has been working with the Perham Collection since 2012 when she processed the Lee and Marie de Forest Papers.

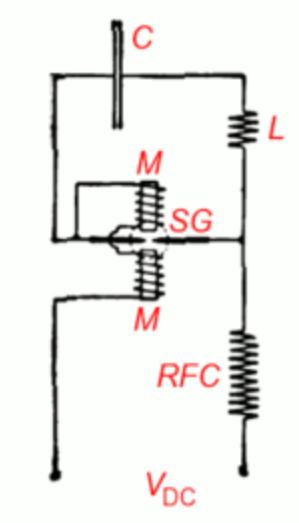
Clearly, we were surrounded with some very talented people.



One of the first things I spotted was what looked like a steam boiler in the back of the first room we entered. Surprise…it was a 50-kilowatt transmitter! It took a while to understand how it works.

It's an arc converter, sometimes called the arc transmitter, or Poulsen arc after Danish engineer Valdemar Poulsen who invented it in 1903. It was a variety of Spark transmitter used in early wireless telegraphy. The arc converter used an electric arc to convert direct current electricity into radio frequency alternating current. It was used as a radio transmitter from 1903 until the 1920s when it was replaced by vacuum tube transmitters. One of the first transmitters that could generate continuous sinusoidal

waves it was one of the first technologies used to transmit sound (amplitude modulation) by radio.



Circuit of a basic arc converter
SG = Spark Gap

If you're interested in a full description of an Arc Transmitter go to: https://en.wikipedia.org/wiki/Arc_converter.

There were so many other items of interest in the Museum and Archives that I went a little nuts and took about 200 photos. That's far too many to put in this newsletter so I only selected some of interest and labeled them.

Note: unfortunately the exhibit closed on July 31.

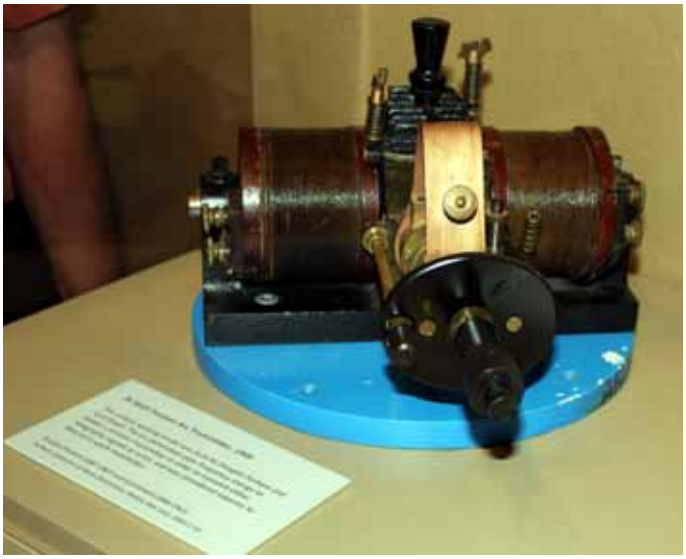
The following items are from the exhibit in the Arbuckle Gallery

Burst Encoder invented by Valdemar Poulsen in 1899. Recorded Messages at Regular Speed & Transmitted in Fast Bursts

1911 Electric Rotating Spark Gap Transmitter

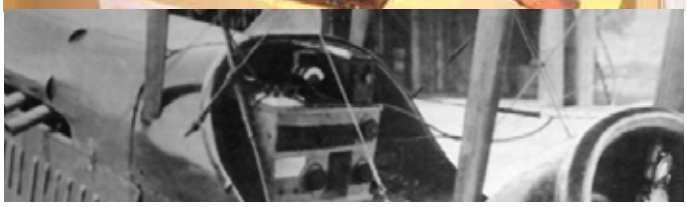
1920s Radios, Spring Suspended Microphone, and Condenser Microphone Amplifier

Misc Items & RDF Reciever



1909 25 Watt Poulsen Arc Transmitter

Gammatron Tube Display



Early Airplane Transceiver Radio Equipment

Spark Gap Transmitter & ??Antenna Tuner??

Complete Radio Station In Operation

The Following Photographs Were Taken at the Electrical/Electronic Section of the Archives

Early Breadboard Style Radios

Miscellaneous Unidentified Items

Miscellaneous Unidentified Items & 1 Megawatt Arc Transmitter in rear

Holmes C. Miller 2 to 30 Megacycle High Frequency Tuner

Old Radio and Miscellaneous

Not Sure Why the Motorcycles Were in this Section of the Archives, But They Are Great Rides From the Past!

The Following Photographs were taken at Ralph Simpson's Private *CIPHER HISTORY MUSEUM* Located in his home. It is only open to viewing by Invitation Only

Ralph Simpson at a corner of His Private Cipher Museum

1908 German Luger P.08 Pistol
This Luger Survived Two World Wars

Japanese WW-II Navy Battle Telephone

WW-II US Army BD-71 Field Telephone Switchboard

1951-1955 Motorola US CIA RS-6 Spy Radio Equipment

1925 to 1959-Teletype Model 14

US SIGTOT Model SSM-33 Daystrom Electric Corporation Mixer

1941 German Enigma Machine
Cipher Type Electro-Mechanical Rotor

1970-1987-Russian R-108M Backpack Radio

US MLP-1A Electrospace Autovon Secure Phone
Cipher Type: Digital Voice

1979-Russian Datchik R-014D Burst Encoder
Cipher Type-Code Matrix & Burst Encoder

1923-Left-Western Electric Spy Phone Amplifier Model 4B
Right-1944-1945-Speak-O-Phone Detector, Model SDB

1959-NASA KY-171 Telemetry Coder
Cipher Type: Analog Telemetry

1943 German Torn 4-Tube Knapsack Field Radio Receiver

1970s KY-57 Voice Encryption
Cipher Type: Digital Voice

Ralph and Dave Discuss the Various Exhibits

This catalog contains pictures and short descriptions of a wide variety of cipher machines, which are on display at the Cipher History Museum. Each chapter highlights a different cipher technology by providing an overview of that technology and then describing the machines chronologically, just as they appear in the museum.

If the few photos in this newsletter have sparked some interest in the subject of cipher machines you can order Ralph Simpson's very excellent book on line for $15.00 at the following link:

https://www.createspace.com/6253488

THE VVRC WELCOMES YOU

The Vaca Valley Radio Club has proudly served the Northern Solano County Area since 1988. We pride ourselves in providing a friendly place for radio amateurs to meet and improve their operating skills.

We participate in public service events throughout the year and are always ready to assist with communications during times of emergency.

Browse our website for more information about our club. If you have any questions please e-mail us at w6vvr@w6vvr.net or call 707-448-5665 for assistance

The Repeater is Published by the Vaca Valley Radio Club, PO Box 143, Elmira, CA 95625-0143, An ARRL Affiliated Club. Founded 1987, Chartered 1988. General Meetings: 2nd Thursday of each month at 7:00 PM 330 Nut Tree Road, (Nut Tree Airport)

Wheelchair accessible

THE BIT BUCKET

NASA just spotted a massive hole growing on the surface of the sun

Ali Sundermier

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A NASA spacecraft just spotted a giant hole creeping over the surface of the sun. It sounds like the recipe for a doomsday blockbuster — the sun slowly gets consumed by blackness, throwing our planet into a cold, dark frenzy. But actually, this hole is no cause for alarm.

It's called a coronal hole, an astronomical phenomenon that pops up on the sun's corona (atmosphere) from time to time.

According to NASA, these holes mark low-density spots where the sun's magnetic field opens freely into interplanetary space, allowing hot material from the corona to speed outward. Because of this, the areas have much less hot plasma than their hotter, brighter surroundings, causing them to appear dark and, well, "holey."

Using a series of images released by NASA, Tom Yulsman of Discover's ImaGeo blog notes put together a short animation showcasing the massive hole.
via GIPHY

"Coronal holes are the source of a high-speed wind of solar particles that streams off the sun some three times faster than the slower wind elsewhere," NASA says. They can appear anywhere from weeks to months at a time, and can take up as much as a quarter of the sun's surface.

Even though a coronal hole on the sun doesn't signal the end of the world, it can lead to a few pesky problems back on Earth.

"Solar winds released from the corona can form solar storms, which can disrupt satellite and radio communication systems," the Huffington Post reports.

'The sun goes blank again during the weakest solar cycle in more than a century'

By: Marc Morano - Climate Depot

The latest solar image is completely spotless for the second time this month; image courtesy NASA

For the second time this month, the sun has gone completely blank. On June 4th, the sun went completely spotless for the first time since 2011 and that quiet spell lasted for about 4 days. Sunspot regions then reappeared for the next few weeks on a sporadic basis, but are once again completely missing from the surface of the sun. The blank sun is a sign that the next solar minimum is approaching and there will be an increasing number of spotless days over the next few years. At first, the blankness will stretch for just a few days at a time, then it'll continue for weeks at a time, and finally it should last for months at a time when the sunspot cycle reaches its nadir. The next solar minimum phase is expected to take place around 2019 or 2020. The current solar cycle is the 24th since 1755 when extensive recording of solar sunspot activity began and is the weakest in more than a century with the fewest sunspots since cycle 14 peaked in February 1906.

Solar cycle 24

We are currently more than seven years into Solar Cycle 24 and it appears the solar maximum of this cycle was reached in April 2014 during a spike in activity (current location indicated by arrow). Going back to 1755, there have been only a few solar cycles in the previous 23 that have had a lower number of sunspots during its maximum phase. The peak of activity in April 2014 was actually a second peak in solar cycle 24 that surpassed the level of an earlier peak which occurred in March 2012. While many solar cycles are double-peaked, this is the first one in which the second peak in sunspot number was larger than the first peak. The sunspot number plot (above) shows a clear weakening trend in solar cycles since solar cycle 22 peaked around 1990.

Continued on page 10

While a weak solar cycle does suggest strong solar storms will occur less often than during stronger and more active cycles, it does not rule them out entirely. In fact, the famous "superstorm" known as the Carrington Event of 1859 occurred during a weak solar cycle (number 10). In addition, there is some evidence that most large events such as strong solar flares and significant geomagnetic storms tend to occur in the declining phase of the solar cycle. In other words, there is still a chance for significant solar activity in the months and years ahead. The last solar minimum phase lasted from 2007 to 2009 and it was historically weak. In fact, it produced three of the most spotless days on the sun since the middle 1800's (bar graph below).

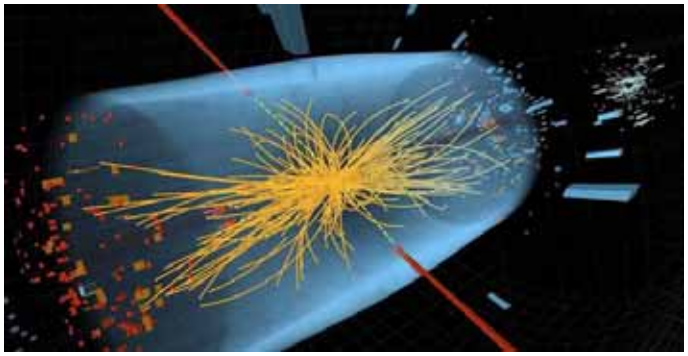
Top "sunspotless" days since 1849; the last solar minimum phase produced 3 of these years

The Consequences of a solar minimum
Contrary to popular belief, solar minimum is not a period of complete quiet and inactivity as it is associated with numerous interesting changes. First, cosmic rays surge into the inner solar system with relative ease during periods of solar minimum. Galactic cosmic rays coming from outside the solar system must propagate upstream against the solar wind and a thicket of solar magnetic fields. Solar wind decreases and sun's magnetic field weakens during solar minimums making it easier for cosmic rays to reach the Earth. This is a more dangerous time for astronauts as the increase in potent cosmic rays can easily shatter a strand of human DNA. Also, during years of lower sunspot number, the sun's extreme ultraviolet radiation (EUV) drops and the Earth's upper atmosphere cools and contracts. With sharply lower aerodynamic drag, satellites have less trouble staying in orbit— a good thing. On the other hand, space junk tends to accumulate, making the space around Earth a more dangerous place for astronauts.

Meteorologist Paul Dorian
Vencore, Inc.

The Government's Do-Nothing Approach to EMP Threats

Heather N. Madden
Jun 20, 2016



Imagine you're driving down the interstate, and suddenly, your car comes to a halt. You pick up your cell phone to call a family member for help, but you don't have service. Then, when you look up, you see that all vehicles are also stopped. It's 96 degrees out so you decide to walk to the nearest gas station to grab a bottled water only to find that your debit card has been rendered useless.

Believe it or not, this scenario is a very real possibility. EMPs—pulses of electromagnetic energy created by natural or manmade causes, such as a terrorist attack—have the potential to critically damage our electrical grid and catastrophically disrupt communications, transportation, emergency services, and food and water supplies, virtually destroying the world we live in today.

Even worse, lives are at stake. According to Dr. Peter Pry, the executive director of the Task Force on National and Homeland Security, EMPs pose "existential threats that could kill 9 of 10 Americans through starvation, disease, and societal collapse."

Most presume that such an event must be extremely unlikely—a one-in-a-billion possibility—so we realistically don't need to worry about it. Yet analyses show that EMP is not an idle threat. Solar activity is cyclical and peaks every 11 years, and historical auroral records show that extreme storms like a Carrington-level event— which could create a power outage for 20 million to 40 million people in the United States for anywhere from 16 days to one to two years—occur roughly every 150 years, suggesting it is almost inevitable that a solar flare event will

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happen at some point in the future. In fact, there is a 12 percent likelihood of a solar storm powerful enough to impact our lives happening in the next decade.

CARTOONS | Gary Varvel

View Cartoon

We also know that a nuclear EMP attack is within the realm of possibility. According to a report from the EMP Commission—a special commission created by Congress to study EMP and to identify ways to mitigate the risk—China and Russia have considered "limited nuclear attack options that, unlike their Cold War plans, employ EMP as the primary or sole means of attack."

Surely there is no remedy to this potential danger or the federal government would take necessary precautions to protect us against this threat. After all, isn't that precisely why government exists in the first place, to keep us safe?

The good news is that protective equipment for the civilian grid is available and can be installed in a timely manner. The bad news is that the departments of Homeland Security and Energy have done little so far to protect us against this very real danger.

The EMP Commission also offered 100 steps that policymakers could take to prepare our infrastructure so we can better weather an EMP. Yet as Joe Colangelo, a former Navy officer, recounts in a recent article for the *Wall Street Journal*, little action has been taken:

"In April, the Government Accountability Office released an alarming account of the bureaucratic dysfunction obstructing EMP mitigation. The GAO determined that although divisions within Homeland Security have been assigned specific tasks, departmental leaders have failed to ensure that this work is carried out. The two departments have not even identified the elements of the electrical infrastructure that most need protecting. Nor have the agencies coordinated strategies to address risks associated with EMPs, including research and development of equipment designed to mitigate damage."

Agency heads have explained that they are doing another study—but it won't be ready until 2017. That means that more than nine years will have passed from the original EMP commissions report and this follow-up study….and America still won't be any safer from the potentially devastating impact of an EMP.

Certainly the complexity of EMPs contributes to this inactivity, but clearly lawmakers should do better and be focused on finding a way to cut through the bureaucratic red tape and take positive action. Given all the money spent—and often wasted—by the federal government, it's all but unforgivable that these needed investments haven't been made to protect American citizens. The public should be outraged and ask that Washington, for once, do its job and make getting prepared for this kind of catastrophe a priority.

The Great Spotted Blue Nosed Desert Whale

Jerry Bowen

On TV news a few years ago, I saw a young fella that was leading a successful shutdown of a lumber mill in Washington State. He had just returned from the forest and he was addressing a gathering of about seventy fellow protesters. He told them he had been talking to the trees and they really appreciated that this group had saved them and the trees wanted to say thank you.

Maybe we're going about our politics all wrong. Come to think of it, a few days later while, I was wandering around the Mojave Desert, a couple of rocks beckoned to me. They said they were black sheep second cousins to John Muir and had a few suggestions on how to save the forests. They said they could begin a movement that would really start a landslide of different opinion regarding our deserts. Don't believe that? Continue on...Not all things are as we see them.

An old friend told me of a reply he received from Senator Diane Feinstein thanking him for his support of endangered whales. The letter he wrote to her was in protest of the California Desert Protection Bill, S-21.

He was a little confused so I felt it was my duty to set him straight about what Senator Feinstein was referring to. I had some inside info (obtained during the Desertgate burglary of Feinstein's office) about the Great Spotted Blue Nosed Desert Whale. The scientific name of the whale is Gigantus Blemishedus Proboscidean-aquamarinus Sand Dune Blubberfish. This gentle 2000-ton creature is a close relative of the Desert Pupfish and a rare species of Pink Elephant. It subsists on a fare of borax and rare earth minerals that are the reason mining must be stopped in the desert regions of the United States. This of course explains the tie to the Desert Protection Bill.

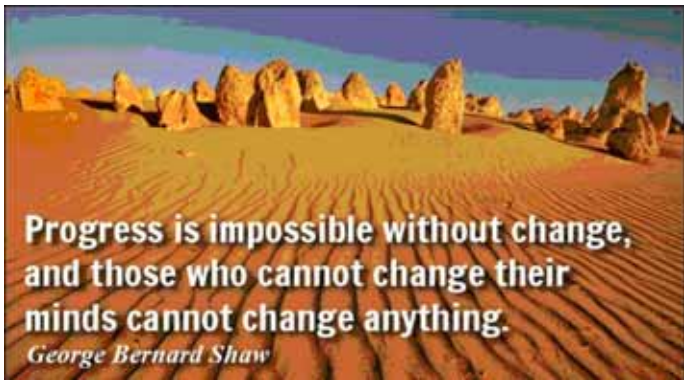
At the time I hadn't found anything in California Bill S-21 that refers to how the whale will be protected other than the designated habitat protection study area. I'm sure a rider was attached to the bill to ensure it will survive the depredations perpetrated on the poor creature by horrible humans.

The Great Spotted Blue Nosed Desert Whale is most often seen after a night of revelry at local saloons especially after imbibing generously of Politically Correct Cactus Juice and smoking local un-endangered weeds.

As a closing note, an environmentalist reported to me while returning from the Sierra Nightclub, a Blue-Nosed Whale was found as road-kill near the Desert Whale Habitat Protection Zone,. A taxpayer-funded reward of one million dollars had been offered for the arrest and conviction of the person driving the offending vehicle. Apparntly the offending vehicle was a motorcycle with minor front end-damage and traces of blue spotted blubber on the windshield.

Naturally after apprising my friend of these facts he won't be so quick to criticize Senator Feinstein and her highly efficient staff in the future.

This item of the newsletter may not be particularly appropriate for this club in the political arena, but then again it's close to going to the voting booths. Be sure to vote, even if the choices aren't always the best you would like. At least you will have had some impact on the future of our country. No matter how minor it is, it all adds up.



2016 Officers

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VP: Frank Garay-KJ6RWQ
Treasurer: Bob Hewitt-K6HEW
Secretary: Brian Hagen-KK6BXP

Board of Directors:
Brian Hagen-KK6BXP
Ruff Gunn-K6DME
Antonio Del Rio-N6ZGB
Richard Craig-KJ6MIB
Artthur Miller-KI6UXE

APPOINTED POSITIONS
VVRC Net Control Chairperson
Club Activities Chairperson-Frank Garay-KJ6RWQ
Newsletter Editor-Jerry Bowen, KJ6SCC
Newsletter Publisher & Distributor-Bob Hewitt, K6HEW

NET CONTROL OPERATORS

1st week of month-Jerry Bowen, KJ6SCC
2nd week of month-Marcus MacLean, KI6WDX
3rd week of month-Chris Jones, KD7TQO
4th week of month-Brian Hagen, KK6BXP
On months with 5 weeks-Bob Hewitt, K6HEW

Letters to the Editor

HI ya Jerry!

Was looking up a call VK3TJK Australia in QRZ.com, and read down through his bio. Check out these pictures….. This is what he does for his real hobby!

WOWie!!
Skip; AF6HC

My passion, is digging and prospecting for gold nuggets in the Bendigo goldfields district using Minelab metal detectors

Some very old gold coins I dug up while metal detecting, lost by the old gold rush pioneers in the 1850's.

Me holding some beautiful gold nuggets found with metal detectors in the Bendigo area recently. 16 ounce, 48 ounce and 76 ounce nuggets. Sadly, these were not found by myself

Some typical examples of small placer gold found in the creeks of this area using Minelab GPX5000 metal detector

Hi Skip,

Those are super examples of what you find in Bendigo, Austraila in the Golden Triangle northwest of Melbourne. I have an old friend (Harry Short) who lives there that struck it rich while full time mining. His gold looked much like the large crystalline nuggets in VK3TJK's hands. It may even be Harry's gold he's holding.

He sold most of his holdings for nearly a million dollars.

By the Way....That Metal Detector he is using is a Minelab GPX-5000 and retails for $9,000!

Jerry, KJ6SCC

Officers and Board of Directors Meeting
Date: Jul 20, 2016 8:30 AM

There will be a Vaca Valley Radio Club Officers and Board of Directors meeting next month.

Date, Time and Location: Thursday August 11, 2016; 6:30 pm

Pietros No. 1407 Cernon St.Vacaville, CA. 95688

Here is a link to their website:

http://pietros1.com/

We will be meeting in their back room that is through the kitchen. When you get there just ask the hostess to point you to where the "radio club" is meeting.As a reminder, you can attend the meeting but you cannot "vote" on any items discussed unless you are an Officer or a Director of the club.

OFFICERS and DIRECTORS--Please make this meeting. This is a very important meeting for the club that requires your attendance. Reply to me with any questions.

Thanks everyone!

Frank Garay
KJ6RWQ
VP - Vaca Valley Radio Club

PLEASE RENEW YOUR MEMBERSHIP

VACAVALLEY RADIO CLUB, INC.

MEMBERSHIP APPLICATION / RENEWAL FORM

Please Print & Fill in Completely

Name: _____ Call Sign_____

Street: _____

City: _____Zip: _____

Phone: (_____) _____-_____OK to Publish ?(_____)

License Class: _____ ARRL Member ?(_____)

E-Mail Address_____

FAMILY Member (Spouse or Children)

Name: _____ Call Sign_____
License Class: _____ARRL Member ?(_____)

Name: _____ Call Sign_____
License Class: _____ARRL Member ?(_____)

MEMBER Dues	$25.00	_____
Each Family Member	$ 2.00	_____
Student	$ 5.00	_____
Repeater/Autopatch donation		_____
Call/Name badge	$11.00	_____
Paid by CASH:	Check #	_____
DATE:		
TOTAL		_____

Mail to : Vaca Valley Radio Club, PO Box 143, Elmira, CA 95625-0143